



**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q63961

Yasuo IWASA, et al.

Appln. No.: 09/841,486

Group Art Unit: 1771

Confirmation No.: 4521

Examiner: Hai VO

Filed: April 25, 2001

For: POROUS RESIN FILM AND INK JET RECORDING MEDIUM

**SUBMISSION OF APPEAL BRIEF**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. A check for the statutory fee of \$500.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

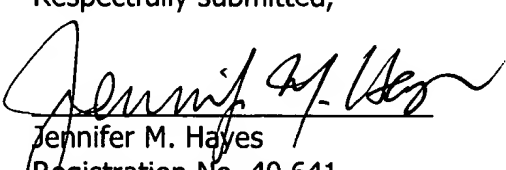
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Date: August 31, 2006



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For: POROUS RESIN FILM AND INK JET RECORDING MEDIUM

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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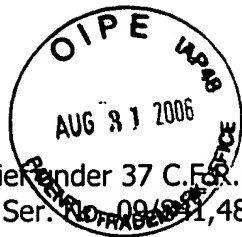


Appeal Brief under 37 C.F.R. § 41.37  
U.S. App. Ser. No. 09/841,486

Q63961

**I. REAL PARTY IN INTEREST**

The real party in interest is Yupo Corporation of Ibaraki, Japan.



Appeal Brief under 37 C.F.R. § 41.37  
U.S. App. Ser. No. 09-2257, 486

Q63961

## **II. RELATED APPEALS AND INTERFERENCES**

Appellants, Appellants' legal representative, and the Assignee of this application are aware of the following previous appeal for the present application which may affect or may have a bearing on the Board's decision in the pending appeal:

Appeal No. 2004-2257.

A copy of the Decision on Appeal mailed March 17, 2005 is attached with the Related Appeals Appendix.

**III. STATUS OF CLAIMS**

The status of the claims is as follows:

Claims 7 and 12 are canceled.

Claims 1-6, 8-11 and 13-19 are rejected.

Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but are stated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

This is an appeal from the Examiner's rejection of claims 1-6, 8-11 and 13-19.

**IV. STATUS OF AMENDMENTS**

The Amendment under 37 C.F.R. § 1.116, filed on May 31, 2006, is entered for purposes of appeal as indicated in the Advisory Action mailed on June 13, 2006.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

The present invention relates to a porous resin film having excellent aqueous liquid or ink absorptivity and to a recording medium comprising the porous resin film, particularly an ink jet recording medium. Specification, page 1, lines 4-7.

There has been an increasing demand for synthetic papers suited for printing with aqueous inks and application of environmentally friendly aqueous pastes, that is, synthetic papers exhibiting satisfactory absorbing properties for aqueous ink, aqueous pastes or water as a medium thereof. Specification, page 1, lines 13-17.

Ink jet printers have become widespread in both business and domestic use. Ink jet printers have the advantages of adaptability for multicolor printing, capability of forming large images and low printing costs. Further, ink jet printers have taken the place of those using oily ink in view of environmental and safety concerns. Ink jet printers have also found wide use for obtaining hard copies from word processors as well as image processors. Therefore, it has been required for printed images to be more precise. Page 1, line 18 to page 2, line 3.

Image precision depends on the drying properties of the ink applied to the recording media. For example, if multiple sheets are printed and superposed on top of each other in succession, the printed ink may cause offset to stain if the recording sheets have insufficient ink absorptivity. Specification, page 2, lines 2-8. To improve image precision, it is a common practice to coat a recording medium such as synthetic paper, plastic film or pulp paper, with an ink receptive material containing a hydrophilic resin or inorganic fine powder. It has also been proposed to provide ink jet recording media with an ink receptive layer mainly comprising a synthetic resin with thermal lamination or extrusion lamination. Specification, page 2, line 17.

However, pulp paper coated with an ink receptive layer is liable to develop unevenness on the printed surface where a large amount of ink is ejected. Because plastic films tend to have inadequate absorptivity when a large amount of ink is ejected, the coating must have an increased thickness, requiring a number of coating operations. Page 2, lines 17-23.

Accordingly, it is an object of the present invention to provide a porous film having satisfactory absorptivity for water as a solvent for an aqueous ink or an aqueous paste. Another object of the present invention is to provide a recording medium, especially for ink jet printing, which uniformly absorbs aqueous ink without causing ink density unevenness even when solid areas are printed with a large amount of ejected ink. Page 2, line 24 to page 3, line 6.

After extensive investigation, the present inventors have found that a porous resin film that is obtained from a compound which is prepared by kneading a thermoplastic resin comprising a water-soluble or water-swelling hydrophilic thermoplastic resin and, if desired, an inorganic and/or an organic fine powder at a shear rate of at least  $300 \text{ sec}^{-1}$  or a laminate having the porous resin film as a surface layer exhibits satisfactory absorptivity for an aqueous liquid. They have also found that a porous resin film having a liquid absorbing capacity of  $0.5 \text{ ml/m}^2$  or more as measured in accordance with the method specified in Japan TAPPI Standard No. 51-87 is capable of absorbing ink without causing ink density unevenness even when a large amount of ink is ejected and is therefore suitable as an ink jet recording medium. Page 3, lines 8-23.

The present invention provides a self-supporting stretched porous resin film which is obtained from a compound prepared by kneading a composition consisting essentially of 30 to

100% by weight of a thermoplastic resin comprising 5 to 100 parts by weight of a hydrophilic thermoplastic resin per 100 parts by weight of a non-hydrophilic thermoplastic resin and 0 to 70% by weight of at least one of an inorganic fine powder and an organic fine powder in an intermeshing twin-screw extruder at a screw shear rate of  $300 \text{ sec}^{-1}$  or higher and which has a liquid absorbing capacity of  $0.5 \text{ ml/m}^2$  or more as measured in accordance with the method specified in Japan TAPPI Standard No. 51-87. Claim 1.

The present invention also provides a laminate comprising a base layer having on at least one side thereof the above-described stretched porous resin film as a printable surface layer. The present invention furthermore encompasses a liquid absorber and a recording medium comprising the stretched porous resin film or the laminate, particularly a recording medium for ink jet recording comprising the porous resin film or the laminate and a colorant fixing layer. Specification, page 4, lines 7-14.

The stretched porous resin film of the present invention exhibits high absorptivity for an aqueous solvent or aqueous ink. The recording medium comprising the stretched porous resin film of the invention forms precise images free from ink density unevenness even when printed with a large amount of ink ejected from an ink jet. Accordingly, the stretched porous resin film and the recording medium of the invention are suited to a wide variety of applications including ink jet recording media. Specification, page 4, lines 15-22.

The porous resin film of the present invention can serve as it is, i.e., self-supporting, or can be combined with another thermoplastic film, laminated paper, pulp paper, nonwoven fabric, woven fabric, etc., to form a laminate. Specification, page 24, lines 5-8.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

**A. Claims 1-6, 8-11 and 13-19 are rejected based on Arai (WO 99/46117)**

Claims 1-6, 8-11 and 13-19 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over WO 99/46117 (Arai). U.S. 6,632,487 to Arai et al is relied on as an equivalent form of WO 99/46117.

According to the Examiner, Arai teaches a sheet useful as an image-receiving sheet for an ink-jet recording comprising a substrate and a porous resin film provided on the substrate (abstract).

The Examiner relies on Arai for the disclosure of a porous resin layer which is said to comprise 95 parts by weight of a mixture of hydrophilic and hydrophobic resins and 5 parts of an inorganic fine powder (example 10). The porous layer is also asserted to contain 5 to 50% by weight of the hydrophilic resin based on the total amount of the hydrophilic resin and hydrophobic resin (column 7, lines 25-30). Thus, the Examiner concludes that the porous layer contains 5 to 50% by weight of the hydrophilic resin and 95 to 50% by weight of the hydrophobic resin.

The Examiner further asserts that the ratio of the amount of the hydrophilic resin to the amount of the hydrophobic resin is 5:95 to 1, which is within the claimed range. The Examiner also relies on the disclosure of Arai for the teachings of a polyethylene oxide hydrophilic resin (example 10); that the porous resin layer is prepared by kneading (column 9, lines 40-45); that

the inorganic fine powder has an average particle size of 1 to 5 microns (column 8, lines 32-35); and that the hydrophilic resin is a polyolefin (column 5, lines 8- 10).

The Examiner admits that Arai does not disclose that the hydrophilic thermoplastic resin is capable of absorbing 5 g/g or more of water in 30 minutes. However, it is the Examiner's position that it appears that Arai uses the same polyolefin as the hydrophilic resin as Applicants and therefore the absorbing capability would be an inherent property, since like materials have similar properties.

The Examiner admits that Arai does not specifically disclose an average contact angle, porosity, and pore density of the porous resin layer. However, it is the Examiner's position that the porous resin layer appears to meet all the structural limitations as required by the claims in view of the disclosure of Arai relied on as discussed above. The Examiner takes the position that since the recited structure of the claimed invention is met, the properties must be met or Applicant's claim is incomplete.

The Examiner also admits that Arai does not specifically disclose that the porous resin layer is stretched or that a composition comprising inorganic fine powder is kneaded in an intermeshing twin screw extruder at a screw shear rate of 300 sec<sup>-1</sup> or higher. However, the Examiner takes the position that these elements are product-by-process limitations that have not been shown to produce a patentably distinct article. The Examiner concludes that the porous resin layer of Arai is identical to or only slightly different from the claimed porous resin film prepared by the method of the claim, because both articles are formed from the same materials, having structural similarity.

Regarding the element of the claimed film being "self-supporting", the Examiner states that that Arai has a thickness of from 1 to 100 microns, which is within the range disclosed in the specification of the present application and that the powdery composition is suitable as an image receiving sheet for a water-based ink jet recording as the self-supporting stretched porous resin film of the present invention. Thus, it is the Examiner's position that the powdery coating composition forming the porous resin layer of Arai is not excluded from being a self-supporting film.

In summary, the Examiner concludes that the porous resin film of Arai is identical to, or only slightly different from the claimed invention because the articles are formed from the same materials having structural similarity and that the burden has shifted to Applicants to establish a nonobvious difference between the claimed product and the product of Arai.

**B. Claim 11 is rejected based on Arai (WO 99/46117) in view of JP 07-195827**

Claim 11 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over WO 99/46117 (Arai) as applied to claim 1 above, and further in view of JP 07-19582 to Fujita (JP '827).

The Examiner states that Arai fails to teach that the alkylene oxide polymer is a reaction product of an alkylene oxide compound and a dicarboxylic acid compound.

The Examiner relies on JP '827 for the teaching of a recording sheet used in printing made from an alkylene oxide polymer which is a reaction product of an alkylene oxide compound and a dicarboxylic acid compound (abstract).

It is the Examiner's position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ an alkylene oxide polymer which is a reaction product of an alkylene oxide compound and a dicarboxylic acid compound because it is a practical and economical method of preparing the alkylene oxide polymer of the recording sheet.

## **VII. ARGUMENT**

### **A. Grouping of Claims**

Claims 1-6, 8 and 13-19 stand or fall together for purposes of this appeal only.

### **B. Claims 1-6, 8-11 and 13-19 are not anticipated by WO 99/46117 (Arai)**

Applicants respectfully submit that the cited references do not disclose, teach or suggest the presently claimed invention, whether taken alone or in combination.

Claim 1 of the present application recites a self-supporting stretched porous resin film which is obtained from a compound prepared by kneading a composition consisting essentially of 30 to 100% by weight of a thermoplastic resin comprising 5 to 100 parts by weight of a hydrophilic thermoplastic resin per 100 parts by weight of a non-hydrophilic thermoplastic resin and 0 to 70% by weight of at least one of an inorganic fine powder and an organic fine powder in an intermeshing twin-screw extruder at a screw shear rate of  $300 \text{ sec}^{-1}$  or higher and which has a liquid absorbing capacity of  $0.5 \text{ ml/m}^2$  or more as measured in accordance with the method specified in Japan TAPPI Standard No. 51-87.

Arai does not disclose, teach or suggest a "self-supporting stretched porous resin film" as recited in the present claims and as supported by the present specification, for example, on page 24, lines 5-6.

Arai provides a sheet coated with a powdery composition combined with a substrate and a porous and continuous resin layer provided on the substrate. The resin layer is formed by dry coating the powdery composition on a substrate, melting the powdery coating

composition by heating and fixing the composition together with the inorganic fine particles on the substrate to form the resin layer. Abstract.

The Examiner's position is that the powdery composition of Arai meets the claimed invention. In this regard it is essentially the Examiner's position that the features of a "self-supporting" and/or a "stretched" film are inherent in the powdery composition of Arai et al. However, inherency may not be established by probabilities or possibilities that a certain property or characteristic might be achieved if certain conditions are optimized. To establish inherency, the evidence must make it clear that the characteristic or property is necessarily present in the prior art. See MPEP § 2112(IV). Further, the Examiner has the initial burden to provide a reasonable basis for asserting that the claim elements are met by the prior art and the fact that Arai et al does not exclude the powdery composition from being self-supporting does not necessarily mean that it is a self-supporting film. Similarly, since the term "stretched" is a positive distinguishing element of the claims, the burden shifts to the Examiner to provide a reasonable basis for asserting that the powdery coating composition of Arai meets the element of the presently claimed invention.

Applicants respectfully submit that the Examiner has not met this burden. As previously pointed out, the resin powdery composition of Arai (Example 10) cannot form an independent self-supporting ink-receiving layer and is completely different from the stretched porous resin film of the present invention.

In Example 10, Arai discloses a sheet for an aqueous ink-jet recording medium comprising an ink-receiving layer and a substrate. The Examiner alleges that the ink-receiving

layer of Example 10 of Arai is identical to, or only slightly different from, the porous resin film of the present invention.

The ink-receiving layer of Example 10 of Arai is prepared by obtaining a resin powdery composition containing 100 parts of a styrene-acrylic copolymer and 30 parts of a water-soluble resin, which has an average particle diameter of 11.0  $\mu\text{m}$ . Then, 95 parts of the resin powdery composition and 5 parts of hydrophilic silica particles are mixed to obtain a powdery coating mixture, which is sprayed on and adhered to the entire surface of a commercially available ordinary paper using a commercially available electrostatic spray device. The powdery coating mixture is fixed on the ordinary paper by heating at about 80 to 100°C under pressure. At the same time, the particles of the coating mixture are partially melted and adhered to each other, thereby forming a resin layer as the ink-receiving layer of Arai, which has a thickness of 20  $\mu\text{m}$  and gaps between the particles.

Thus, the resin powdery composition of Arai (Example 10) cannot form an independent self-supporting ink-receiving layer and is completely different from the stretched porous resin film of the present invention. That is, the ink-receiving layer of Arai (Example 10) formed on an ordinary paper is completely different from the self-supporting stretched porous resin film of the present invention formed from the composition recited in the present claims. The composition of the present invention is kneaded in an intermeshing twin-screw extruder at a screw shear rate of 300  $\text{sec}^{-1}$  to produce a porous resin film and the porous resin film is stretched. The self-supporting stretched porous resin film of the claimed invention is capable of being used alone or may be combined to form a laminate. See, e.g., page 24, lines 5-8 of the specification.

Thus, the terms “self-supporting”, “film” and “stretched” in the present claims define structural and physical elements of the claimed invention that distinguish it from the ink-receiving layer of Arai. The ink-receiving layer of Arai said to correspond to the stretched porous resin film of the present invention cannot be self-supporting or stretched and does not form a film within the scope of the present invention. Therefore, Arai does not disclose all elements of the present claims, explicitly or inherently and thus, the claimed invention as recited in independent claim 1 is not anticipated by Arai.

In addition, Arai does not teach or suggest a self-supporting stretched porous resin film as recited in independent claim 1 of the present invention for the same reasons set forth above and there is no motivation for one of ordinary skill in the art to modify the disclosure of Arai et al with a reasonable expectation of success since there is no disclosure or suggestion that the powdery composition of Arai is intended to be used or even could be used as a self-supporting stretched porous resin film. Thus, the claimed invention is not rendered obvious based on the teachings of Arai.

Accordingly, the rejection over Arai based on §102, or in the alternative, based on §103 should be reversed.

**D. Claim 11 is not rendered obvious by Arai in view of JP 07-195827 (JP '827)**

With respect to the rejection of claim 11 over Arai in view of JP '827, JP '827 does not remedy the deficiencies of Arai. Specifically, JP '827 also fails to disclose, teach or suggest a self-supporting stretched porous resin film as claimed. Thus, one of ordinary skill in the art would not have been motivated to combine the references with a reasonable expectation of

success. Even if combined, the present invention would not have been achieved since neither of the references teaches a self-supporting stretched porous resin film within the scope of the present invention. Thus, the present invention as recited in claim 11 is not rendered obvious by the cited references.

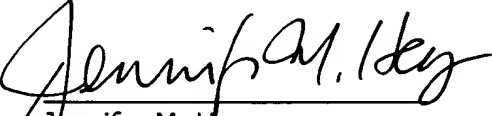
Accordingly, the §103 rejection based on Arai in view of JP '827 should be reversed.

**E. Conclusion**

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: August 31, 2006

### **CLAIMS APPENDIX**

CLAIMS 1-6, 8-11 and 13-19 ON APPEAL:

**1. (previously presented):** A self-supporting stretched porous resin film which is obtained from a compound prepared by kneading a composition consisting essentially of 30 to 100% by weight of a thermoplastic resin comprising 5 to 100 parts by weight of a hydrophilic thermoplastic resin per 100 parts by weight of a non-hydrophilic thermoplastic resin and 0 to 70% by weight of at least one of an inorganic fine powder and an organic fine powder in an intermeshing twin-screw extruder at a screw shear rate of  $300 \text{ sec}^{-1}$  or higher and which has a liquid absorbing capacity of  $0.5 \text{ ml/m}^2$  or more as measured in accordance with the method specified in Japan TAPPI Standard No. 51-87.

**2. (original):** The porous resin film according to claim 1, which has an average contact angle of  $110^\circ$  or less with water.

**3. (original):** The porous resin film according to claim 2, wherein the difference between the maximum and the minimum contact angles with water is  $30^\circ$  or less.

**4. (original):** The porous resin film according to claim 1, which has a porosity of 10% or more.

**5. (original):** The porous resin film according to claim 4, which has  $1 \times 10^6$  or more pores per  $\text{m}^2$  on the surface thereof.

**6. (original):** The porous resin film according to claim 1, wherein said inorganic or organic powder has an average particle size of 0.01 to 20  $\mu\text{m}$ .

**7. (canceled)**

**8. (previously presented):** The porous resin film according to claim 1, wherein said non-hydrophilic thermoplastic resin is a polyolefin resin.

**9. (previously presented):** The porous resin film according to claim 1, wherein said hydrophilic thermoplastic resin is capable of dissolving in water or absorbing 5 g/g or more of water in 30 minutes.

**10. (original):** The porous resin film according to claim 9, wherein said hydrophilic thermoplastic resin is an alkylene oxide polymer.

**11. (original):** The porous resin film according to claim 10, wherein said alkylene oxide polymer is a reaction product of an alkylene oxide compound and a dicarboxylic acid compound.

**12. (canceled).**

**13. (original):** A laminate comprising a base layer having on at least one side thereof the porous resin film set forth in claim 1.

**14. (original):** A liquid absorber comprising the porous resin film set forth in claim 1.

**15. (original):** A liquid absorber comprising the laminate set forth in claim 13.

**16. (original):** A recording medium comprising the porous resin film set forth in claim 1.

**17. (original):** A recording medium comprising the laminate set forth in claim 13.

**18. (original):** An ink jet recording medium comprising the porous resin film set forth in claim 1.

**19. (original):** An ink jet recording medium comprising the laminate set forth in claim 13.

**20. (original):** An ink jet recording medium comprising the porous resin film set forth in claim 1 and a colorant fixing layer provided on at least one side of said porous resin film.

**21. (original):** An ink jet recording medium comprising the laminate set forth in claim 13 and a colorant fixing layer provided on the porous resin film provided on one side of said base layer or on both the porous films provided on both sides of said base layer.

**EVIDENCE APPENDIX:**

Pursuant to 37 C.F.R. § 41.37(c)(1)(ix), submitted herewith are copies of any evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

None.

**RELATED PROCEEDINGS APPENDIX**

Submitted herewith are copies of decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Suchrue Ref: Q63961

*Ex parte* YASUO IWASA and SHIGEKAZU OI

Appeal No. 2004-2257  
Application No. 09/841,486

HEARD: FEBRUARY 8, 2005

**DOCKETED**

MAR 18 2005

**MAILED**

MAR 17 2005

PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Before GARRIS, PAK, and JEFFREY T. SMITH, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 1 through 6, 8 through 11 and 13 through 19.<sup>1</sup> Claims 20 and 21, the only other claims

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<sup>1</sup> After indicating cancellation of claims 7 and 12 in the above-identified application, the appellants have inadvertently asserted that they are appealing "from the [e]xaminer's rejection of claims 1-7, 9-11 and 13-19." See the Brief dated February 23, 2004, page 2. By making the claims on appeal to reflect those which have not been canceled, we have made appropriate correction

remaining in the above-identified application, were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See the Answer, page 2. Claim 1 was amended subsequent to the final Office action dated March 21, 2003.

*APPEALED SUBJECT MATTER*

The subject matter on appeal is directed to "[a] stretched porous resin film" useful for an ink jet recording medium, having excellent aqueous liquid or ink absorptivity. See claim 1, together with the specification, page 1. Details of the appealed subject matter are recited in claim 1 which is reproduced below:

1. A stretched porous resin film which is obtained from a compound prepared by kneading a composition consisting essentially of 30 to 100% by weight of a thermoplastic resin comprising 5 to 100 parts by weight of a

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to the appellants' inadvertent error in the Brief consistent with the appellants' subsequent corrective statement at page 2 of the Reply Brief dated June 29, 2004. The appellants have also asserted for the first time in the appeal that they are appealing from the examiner's objection to claims 20 and 21. See the Reply Brief, page 2. By so asserting, the appellants have failed to recognize that the examiner's objection is not a matter reviewable by the Board (the Board of Patent Appeals and Interferences). The appellants' remedy is through a timely filed petition to the Director of the appropriate Technology Center under 37 CFR § 1.181 (2003).

Appeal No. 2004-2257  
Application No. 09/841,486

hydrophilic thermoplastic resin per 100 parts by weight of a non-hydrophilic thermoplastic resin and 0 to 70% by weight of at least one of an inorganic fine powder and an organic fine powder in an intermeshing twin-screw extruder at a screw shear rate of  $300 \text{ sec}^{-1}$  or higher and which has a liquid absorbing capacity of  $0.5 \text{ ml/m}^2$  or more as measured in accordance with the method specified in Japan TAPPI Standard No. 51-87.

#### *PRIOR ART*

The examiner relies on the following prior art references:

Suzuki et al. (Suzuki)	4,506,037	Mar. 19, 1985
Arai et al. (Arai)	4,686,118	Aug. 11, 1987
Fujita et al. (Fujita)	5,059,630	Oct. 22, 1991

#### *THE REJECTIONS*

The appealed claims stand rejected as follows:

- 1) Claims 1 through 6, 8, 9 and 13 through 19 under 35 U.S.C. § 102(b) as anticipated by the disclosure of Suzuki<sup>2</sup>;
- 2) Claim 10 stands rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Suzuki and Arai; and

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<sup>2</sup> At page 3 of the Answer, the examiner has inadvertently included canceled claim 7 in this rejection. We have corrected this inadvertent error made by the examiner by deleting canceled claim 7 from the statement of rejection.

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- 3) Claim 11 stands rejected under 35 U.S.C. § 103 as unpatentable over the combined disclosures of Suzuki, Arai and Fujita.

#### *OPINION*

We have carefully reviewed the claims, specification and prior art, including all of the arguments advanced by both the examiner and the appellants in support of their respective positions. This review has led us to conclude that the examiner's rejections are not well founded. Accordingly, we will not sustain the examiner's rejections for the reasons set forth in the Brief, the Reply Brief and below.

#### *SECTION 102 REJECTION*

Under Section 102, anticipation is established only when a single prior art reference clearly and unequivocally discloses, either expressly or under the principles of inherency, each and every element of the claimed subject matter without any need for picking, choosing and combining various disclosures within the reference. *In re Arkley*, 455 F.2d 586, 587-88, 172 USPQ 524, 526 (CCPA 1972).

Here, as evidence of anticipation of the subject matter defined by claims 1 through 6, 8, 9 and 13 through 19 under Section 102(b), the examiner relies on the disclosure of Suzuki.

Suzuki, however, does not clearly and unequivocally disclose the claimed subject matter. To arrive at the claimed subject matter, a person having ordinary skill in the art must select specific proportions of specific hydrophilic solid powders falling within the generic teachings provided by Suzuki. The resin foams exemplified in Suzuki, for example, are not produced by using a thermoplastic resin containing the claimed proportion of a hydrophilic thermoplastic resin. See columns 7-13, Examples 1-6. To remedy this deficiency in Suzuki's examples, one of ordinary skill in the art must not only be able to envisage a hydrophilic thermoplastic resin from the large list of hydrophilic solid powders provided at column 2, lines 51-66, of Suzuki, but also be able to readily select the claimed proportion from Suzuki's disclosed proportions based on the end uses different from that disclosed by the appellants. Compare Suzuki, column 5, lines 23-37 and column 7, lines 7-16, with the specification, page 4-7. As stated in Arkley, such picking and choosing of ingredients and proportions to arrive at the claimed subject matter have no place in the making of a Section 102 anticipation rejection.<sup>3</sup>

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<sup>3</sup> On this record, the examiner has not established that one of ordinary skill in the art would have been motivated to use the claimed proportion of the fine hydrophilic thermoplastic resin in the articles taught by Suzuki since Suzuki does not teach using

It follows that the examiner on this record has not established a *prim facie* case of anticipation. Accordingly, we reverse the examiner's Section 102 rejection.

#### SECTION 103 REJECTIONS

Under Section 103, both the motivation or suggestion to combine the prior art teachings and the requisite reasonable expectation of success must be found in the prior art references in order to establish a *prima facie* case of obviousness. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

Here, as evidence of obviousness of the subject matter defined by claims 10 and 11 under Section 103, the examiner relies on the disclosures of Suzuki, Arai and Fujita. According to the examiner (Answer, pages 7-8), Suzuki teaches all the claimed limitations, except for the hydrophilic alkylene oxide polymer recited in claim 10 or the hydrophilic alkylene oxide polymer produced by a reaction between an alkylene oxide compound and a dicarboxylic acid compound as recited in claim 11. The

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the fine hydrophilic thermoplastic resin for forming the recording medium contemplated by the appellants. See column 7, lines 6-16. As indicated by Suzuki (column 5, lines 23-37), the proportion of the fine hydrophilic solid powder used "can be varied **widely** according to the types of the resin and the fine solid powder, the water absorption and the water vapor adsorption ratio required of the resulting porous agglomerated particles, **etc.**" (Emphasis added).

examiner then relies on Arai to teach a hydrophilic alkylene oxide polymer and Fujita to teach a hydrophilic alkylene oxide polymer formed from a reaction between an alkylene oxide compound and a dicarboxylic acid compound. *Id.* Based on these combinations of teachings, the examiner holds that it would have been obvious to use the hydrophilic alkylene oxide polymer taught by Arai and/or Fujita as the hydrophilic powder of Suzuki. *Id.* According to the examiner (*Id.*), one of ordinary skill in the art would have been motivated to use the hydrophilic alkylene oxide polymer taught by Arai and/or Fujita as the hydrophilic powder of Suzuki because of "its ready availability and economic advantage" or because "an alkylene oxide polymer and melamine [taught in Suzuki] have been shown in the art to [be] recognized equivalent hydrophilic resin[s] which [are] compatible with the non-hydrophilic resin."

We cannot subscribe to the examiner's position. In the first place, the examiner does not point to any factual basis for concluding the so-called "art . . . recognized [equivalency]" and "economic advantage" for using the alkylene oxide polymer taught by Arai and Fujita. See the Answer, pages 7 and 8. In the second place, the examiner has not explained why one of ordinary skill in the art would have been led to employ an alkylene oxide

polymer useful for end uses different from that described in Suzuki. See the Answer in its entirety. We note that Suzuki, on the one hand, is directed to producing resin foams useful for making foam sheets, foamed blow-molded articles and foamed pipes as indicated *supra*. On the other hand, we note that Arai and Fujita are directed to forming an ink receptive layer for a recording medium and ultrafine fibers, respectively. See the abstracts of Arai and Fujita. In the third place, as indicated *supra*, the examiner has not explained why one of ordinary skill in the art would have been led to employ the claimed proportion of a hydrophilic thermoplastic resin desirable for a recording medium in forming Suzuki's resin foams.

Thus, on this record, we concur with the appellants that the examiner has failed to establish a *prima facie* case of obviousness. Accordingly, we reverse the examiner's decision rejecting claims 10 and 11 under 35 U.S.C. § 103.

**REMAND**

We note that Arai is the closest prior art. Arai teaches (column 4, lines 11-30) that:

The present inventors have studied intensively in order to overcome such drawbacks of the prior art and consequently found that use of a mixture of polymers with different properties relative to moisture, namely formation of an ink receiving layer by mixing Polymer A

and Polymer B, will not result in lowering in strength of the ink receiving layer even under high temperature and high humidity conditions without causing stickiness of the surface, and further can form an ink receiving layer exhibiting excellent ink receiving characteristic even under low temperature and low humidity conditions, thus revealing only the advantages of Polymer A and Polymer B without manifestation of the drawbacks of both polymers.

Polymer A and Polymer B . . . at least one of them should be a hydrophilic or water-soluble polymer.

In other words, Arai, like the appellants, teaches employing the claimed combination of thermoplastic resins to optimize, *inter alia*, an ink absorbing capacity of a recording medium. Arai then goes on to exemplify employing thermoplastic resins, including the claimed proportion of a hydrophilic thermoplastic resin, to improve an ink receiving layer of a recording medium. See columns 8-11, Examples 1-6, together with column 3, line 50 to column 4, line 41. Arai does not indicate that these thermoplastic resins are kneaded via an intermeshing twin-screw extruder at a shear rate of  $300 \text{ sec}^{-1}$  or higher. However, according to the appellants (specification, page 2), kneading these types of thermoplastic resins for the purpose of making an ink receiving layer for a recording medium is admittedly known as evidenced by JP-A-8-12871, JP-A-9-1920 and JP-A-314983.

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The court provides guidance for analyzing the patentability of product-by-process claims in *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 965-66 (Fed. Cir. 1985) as follows:

Product-by-process claims are not specifically discussed in the patent statute. The practice and governing law have developed in response to the need to enable an applicant to claim an otherwise patentable product that resists definition by other than the process by which it is made. For this reason, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972); *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969); *Buono v. Yankee Maid Dress Corp.*, 77 F.2d 274, 279, 26 USPQ 57, 61 (2d. Cir. 1935).

The patentability of a product does not depend on its method of production. *In re Pilkington*, 411 F.2d 1345, 1348, 162 USPQ 145, 147 (CCPA 1969). If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Marosi*, 710 F.2d 799, 803, 218 USPQ 289, 292-93 (Fed. Cir. 1983); *Johnson & Johnson v. W. L. Gore*, 436 F.Supp. 704, 726, 195 USPQ 487, 506 (D. Del. 1977); see also, *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974).

Thus, upon return of this application to the examiner's jurisdiction, it is ORDERED that:

- 1) the examiner is to determine whether the ink receiving layer exemplified in Arai is identical or substantially identical to the claimed stretched porous resin film; and

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2) the examiner is to determine whether the combined teachings of Arai and the appellants' admission would have rendered the claimed stretched porous resin film obvious.

The above determinations necessarily require the examiner to obtain translated copies of the above-stated Japanese documents. If any of the above determinations results in a new ground of rejection, the examiner should reopen the prosecution of this application.

This remand to the examiner pursuant to 37 CFR § 41.50(a)(1) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)) is made for further consideration of a rejection. Accordingly, 37 CFR § 41.50(a)(2) applies if a supplemental examiner's answer is written in response to this remand by the Board.

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## CONCLUSION

In view of the foregoing, we reverse the examiner's aforementioned rejections and remand the application to the examiner for appropriate action consistent with the above instruction.

**REVERSED/REMANDED**

BRADLEY R. GARRIS  
Administrative Patent Judge

CHUNG K. PAK  
Administrative Patent Judge

JEFFREY T. SMITH  
Administrative Patent Judge

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